

CLAIMS

1. A hard surface cleaner comprising a first precursor composition, being a thin alkaline liquid which contains a compound which generates chlorine dioxide under acidic conditions but not under alkaline conditions, and a second precursor composition, being a thin acidic liquid, wherein on mixing the first and second precursor compositions the resulting admixed cleaning composition is acidic, causing the compound to generate chlorine dioxide, and is more viscous than the first precursor composition and more viscous than the second precursor composition.
2. A cleaning composition cleaner as claimed in claim 1, wherein the viscosity of the first precursor composition is in the range 0.5-100 cps, the viscosity of the second precursor composition is in the range 0.5-100 cps and the viscosity of the cleaning composition produced by admixture thereof is 150-4000 cps.
3. A cleaning composition as claimed in claim 1 or 2 wherein the first precursor composition is of pH at least 8, and comprises an alkali metal chlorite stabilised in aqueous solution by an additional base.
4. A cleaning composition as claimed in any preceding claim, wherein the second precursor composition is of pH not more than 5, and comprises a mineral acid in aqueous solution.
5. A cleaning composition as claimed in any preceding claim, wherein the pH of the cleaning composition, formed

by admixture of the first and second precursor compositions, is not more than 5.5

6. A cleaning composition as claimed in any preceding
5 claim, wherein the first precursor composition and/or the second precursor composition contains a surfactant which thickens on admixture of the precursor compositions.

7. A cleaning composition as claimed in claim 6, wherein
10 the first precursor comprises such a surfactant, which thickens on admixture with acid.

8. A cleaning composition as claimed in claim 6 or 7,
wherein the surfactant is an anionic surfactant, being an
15 alkyl sulphate or sulphonate.

9. A cleaning composition according to claim 6, 7 or 8,
wherein the surfactant is alkoxyated.

20 10. A cleaning composition according to claims 8 and 9,
wherein the surfactant is a C₈₋₂₀ alkyl-EO₁₋₄ sulphate, with an alkali metal cation.

11. A cleaning composition as claimed in any preceding
25 claim, wherein the first and/or second precursor composition comprises a colour change agent which cause a change in appearance on mixing of the precursor compositions.

30 12. A cleaning composition as claimed in any preceding claim, being a hard surface cleaner which comprises (% w/w values stated with reference to the total cleaning composition):

0.02-2% w/w, preferably 0.1-1% w/w, of a compound which under acid conditions generates chlorine dioxide, provided substantially wholly via the first precursor liquid;

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0.5-5% w/w, preferably 1.5-4% w/w, of an alkali metal, alkoxyated C₈₋₂₀ alkyl sulphate surfactant which thickens on being acidified, provided partially or substantially wholly via the first precursor liquid;

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20-46% w/w, preferably 28-40% w/w, water, provided via the first precursor liquid;

an alkali metal base, provided substantially wholly via the first precursor liquid, in an amount such as to make the pH thereof at least 12;

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20-46% w/w, preferably 28-40% w/w, water, provided via the second precursor liquid;

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an acid, provided substantially wholly via the second precursor liquid, in an amount such as to make the pH thereof not more than 5 and the pH of the admixed cleaning composition not more than 0.5 higher than the pH of the second precursor liquid;

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wherein the viscosity (as measured herein) of the first precursor liquid is in the range 0.1-100 cps, preferably 1-10 cps, the viscosity of the second precursor liquid is in the range 0.1-100 cps, preferably 1-10 cps, and the viscosity of the admixed composition is in the range 150-1400 cps, preferably 500-1000 cps.

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13. A hard surface cleaning pack comprising a first chamber containing a first precursor composition, being a thin alkaline liquid which contains a compound which generates chlorine dioxide under acidic conditions but not
5 under alkaline conditions, and a second chamber containing the second precursor composition, being a thin acidic liquid, wherein the chambers are adapted for simultaneous, separate, dispensing of the first and second precursor compositions with downstream mixing thereof, wherein on
10 mixing the first and second precursor compositions the resulting admixed cleaning composition is acidic, causing the compound to generate chlorine dioxide, and is more viscous than both first precursor compositions.

15 14. A method of cleaning a hard surface, the method comprising use of a cleaning composition which is an in situ mixture of the first precursor composition and the second precursor composition, as defined in any of claims 1 to 12.

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15. A method as claimed in claim 14, comprising the admixture of the first and second precursor compositions, the first precursor composition constituting 30-70 parts by weight of the cleaning composition and the second
25 precursor composition constituting the balance.

16. A cleaning composition, cleaning pack or cleaning method, each substantially as hereinbefore described with particular reference to the examples.

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